CLAIMS

I CLAIM AS MY INVENTION:

1. A method of acoustic thermography comprising:

applying a material to a specimen to be tested, the material being thermally responsive to acoustic energy transmitted to the specimen by an acoustic thermography system; and

processing a thermal response of the material when acoustic energy is applied to the specimen by the acoustic thermographic system.

2. The method of claim 1 wherein the processing step comprises:

collecting data indicative of a thermal response of the material when the acoustic energy is applied; and

correlating the thermal response of the material to an amount of acoustic energy applied to the specimen.

3. The method of claim 2 further comprising comparing the amount of acoustic energy applied to the specimen to a desired amount necessary for inspecting the specimen.

4. The method of claim 3 further comprising generating an indication of whether or not the amount of acoustic energy applied to the specimen appropriately meets the desired amount of acoustic energy for inspecting the specimen.

5. The method of claim 1 wherein the material comprises an adhesive tape.

6. The method of claim 1 wherein the material is selected from the group consisting of fluids, plastic foams, viscoelastic materials, powders, gases convertible into liquids, liquid-impregnated solids, and semi-solids.

7. The method of claim 1 wherein the processing step comprises:

collecting data indicative of a thermal response of the material when the acoustic energy is applied; and

correlating the thermal response of the material to determine whether a flaw is present in the specimen.

8. The method of claim 7 wherein the applying step comprises:

applying a liquid form of the material; and

wiping off excess liquid material from the specimen.

9. The method of claim 7 wherein the liquid is drawn into the flaw by capillary and/or surface tension forces.

10. The method of claim 7 wherein the applying step comprises applying a coating of the material to a portion of the specimen suspected of including the flaws.

11. The method of claim 7 wherein the applying step comprises applying an adhesive tape to a portion of the specimen suspected of including the flaws.

12. An acoustic thermography apparatus comprising:

an acoustic energy source for imparting acoustic energy into a specimen to be inspected;

a material adapted for application to the specimen for producing a thermal response to acoustic energy imparted to the specimen; and

a sensor for detecting the thermal response of the material.

13. The apparatus of claim 12 wherein the material comprises an adhesive tape.

14. The apparatus of claim 12 wherein the material comprises one of the group consisting of fluids, plastic foams, viscoelastic materials, powders, gases convertible into liquids, liquid-impregnated solids and semi-solids.

15. The apparatus of claim 12 further comprising a plurality of pieces of the material for application to a selected plurality of locations on the specimen.